

Lifestyle Medicine: The Six Pillars

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Disclosures

No Disclosures

Session Objectives

1. Define lifestyle medicine and explain its importance in preventing, managing, and reversing chronic diseases
2. Describe application of the six pillars of lifestyle medicine into clinical practice and patient care
3. Discuss techniques for facilitating behavior change and motivating patients to adopt healthier lifestyles

What is Lifestyle Medicine?

Lifestyle medicine is a medical specialty that uses therapeutic lifestyle interventions as a primary modality to treat chronic conditions including, but not limited to, cardiovascular diseases, type 2 diabetes, and obesity. Lifestyle medicine-certified clinicians are trained to apply evidence-based, whole-person, prescriptive lifestyle change to treat and, when used intensively, often reverse such conditions.

- Based on strong evidence and research
- Highly effective – better outcomes and lower cost
- Addresses the root cause of disease
- Team-based care model with patients as active partners

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The 6 Pillars of Lifestyle Medicine

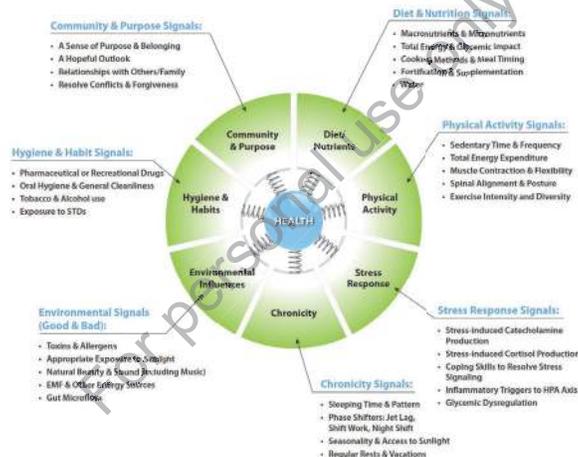
6 KEY DOMAINS OF HEALTH BEHAVIOR:

- Whole Food, Plant-forward Diet
- Physical Activity
- Restorative Sleep
- Stress Management
- Positive Social Connections
- Avoidance of Risky Substances



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The Seven Spheres of Lifestyle Signals



Guilliams, T. (2018). *Cardiometabolic Risk Management: A Functional and Lifestyle Approach*. Used with Permission

Lifestyle Change as First Line of Defense

Clinical guidelines state that diet and physical activity changes are a critical first line treatment for many chronic conditions (e.g., diabetes, obesity, hypertension), often before any medication is prescribed.

This is reinforced by leading national and international organizations.



The National Academies of
SCIENCES • ENGINEERING • MEDICINE

Harvard T.H. Chan School of Public Health
The Nutrition Source
www.hsph.harvard.edu/nutritionsource

USDA
Scientific Report of the
2015 Dietary Guidelines Advisory Committee
Advisory Report to the Secretary of Health and Human Services
and the Secretary of Agriculture



Lancet Commission



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| Type of Practice | Approaches to Patient Care |
|------------------------------|---|
| Conventional Medicine | <ul style="list-style-type: none"> • Focus on symptoms, signs of disease, not underlying causes • Emphasis on diagnosis, pharmacologic/surgical treatment • Medication primary therapeutic intervention • Patients are passive recipients of care • Patients' home and environment usually not assessed/considered |
| Integrative Medicine | <ul style="list-style-type: none"> • Integration of Conventional and Alternative Treatments • Focus on Treatments of Acupuncture, biofeedback, nutraceuticals, and lifestyle interventions • Patients are passive recipients of care • Patients' home and environment usually not assessed/considered |
| Lifestyle Medicine | <ul style="list-style-type: none"> • Emphasis on promoting behavior changes to allow the body to heal itself • Treatment of the underlying lifestyle-related causes of disease • Provider educates, guides and supports patients to make behavior changes • Focus on evidence-based optimal nutrition, stress management, and fitness prescriptions • Patients are active partners in their care • Patients' home and community assessed as contributing factors |
| Functional Medicine | <ul style="list-style-type: none"> • Evidence-based, systems biology approach that addresses underlying dysfunction, rather than treating symptoms • Treatments are combination of lifestyle interventions, nutraceuticals, pharmaceuticals & biologicals • Environmental exposures and social dynamics assessed as contributing factors • Providers guide and support patients • Patients are active partners in their care |

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Why Lifestyle Medicine?

A Decline in U.S. Life Expectancy

Life Expectancy and Mortality Rates in the United States, 1959-2017

Steven H. Woolf, MD, MPH, Heidi Schoomaker, MEd

IMPORTANCE US life expectancy has not kept pace with that of other wealthy countries and is now decreasing.

OBJECTIVE To examine vital statistics and review the history of changes in US life expectancy and increasing mortality rates, and to identify potential contributing factors, drawing insights from current literature and an analysis of state-level trends.

EVIDENCE Life expectancy data for 1959-2016 and cause-specific mortality rates for 1999-2017 were obtained from the US Mortality Database and CDC WONDER, respectively. The analysis focused on midlife deaths (ages 25-64 years), stratified by sex, race/ethnicity, socioeconomic status, and geography (including the 50 states). Published research from January 1990 through August 2019 that examined relevant mortality trends and potential contributory factors was examined.

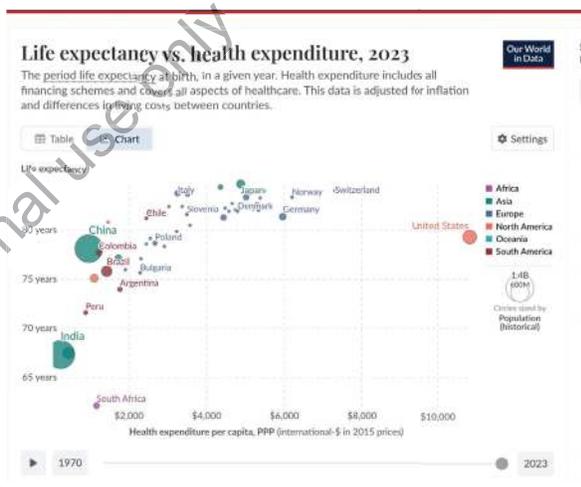
FINDINGS Between 1959 and 2016, US life expectancy increased from 69.9 years to 78.9 years but declined for 3 consecutive years after 2014. The recent decrease in US life expectancy culminated a period of increasing cause-specific mortality among adults aged 25 to 64 years that began in the 1990s, ultimately producing an increase in all-cause mortality that began in 2010. During 2010-2017, middle-all-cause mortality rates increased from 328.5 deaths/100 000 to 348.2 deaths/100 000. By 2014, middle mortality was increasing across all racial groups, caused by drug overdoses, alcohol abuse, suicides, and a diverse list of organ system diseases. The largest relative increases in middle mortality rates occurred in New England (New Hampshire, 23.3%; Maine, 20.7%; Vermont, 19.5%) and the Ohio Valley (West Virginia, 23.0%; Ohio, 21.6%; Indiana, 14.8%; Kentucky, 14.7%). The increase in middle mortality during 2010-2017 was associated with an estimated 33 307 excess US deaths, 32.8% of which occurred in 4 Ohio Valley states.

CONCLUSIONS AND RELEVANCE US life expectancy increased for most of the past 60 years, but the rate of increase slowed over time and life expectancy decreased after 2014. A major contributor has been an increase in mortality from specific causes (eg, drug overdoses, suicides, organ system diseases) among young and middle-aged adults of all racial groups with an onset as early as the 1990s and with the largest relative increases occurring in the Ohio Valley and New England. The implications for public health and the economy are substantial, making it vital to understand the underlying causes.

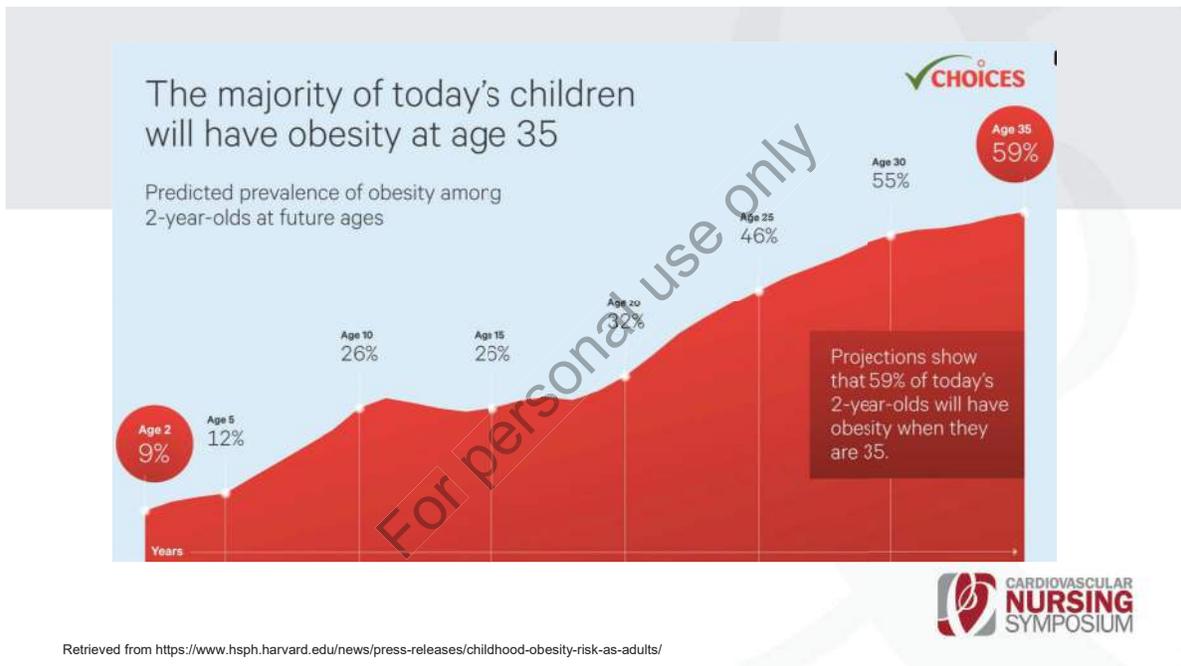
JAMA. 2019;322(22):1995-2006. doi:10.1001/jama.2019.16162

- Editorial page 1992
- Supplemental content
- CME Quiz at [jamanetwork.com/learning](#)

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Woolf, & Schoomaker, (2019).



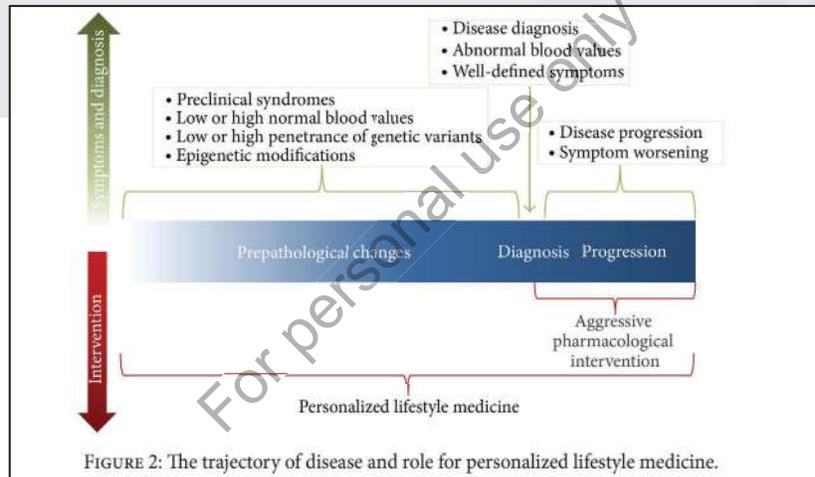
Ornish, D. (2022). A Unified Theory of Lifestyle Medicine. ACLM Conference

"To think we can treat heart disease by lowering cholesterol, lowering blood pressure and lowering blood sugar with medication is like mopping up the floor while the sink overflows...."

—Dr. Mark Hyman
(May 24, 2020)

<https://www.facebook.com/search/top?q=mark%20hyman%2C%20md>

Lifestyle Medicine: An Upstream Approach



Minich & Bland (2013). Personalized Lifestyle Medicine: Relevance for Nutrition and Lifestyle Recommendations. DOI: [10.1155/2013/129841](https://doi.org/10.1155/2013/129841)



Six Powerful Interventions

Whole Food, Plant-forward diet

Physical Activity

Restorative Sleep

Stress Management/Mitigation

Positive Social Connections

Avoidance of Risky Substances

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Americans are Eating Too Much

- Ultra-Processed Foods
 - Sugar
 - Sodium
 - Saturated Fat
 - Calories



Americans Are Not Eating Enough



Image created by presenter using ChatGPT

- Fruits
- Vegetables
- Whole Grains
- Leading to low intake of
 - Fiber
 - Antioxidants
 - Phytochemicals

Group shaping nutrition policy earned millions from junk food makers

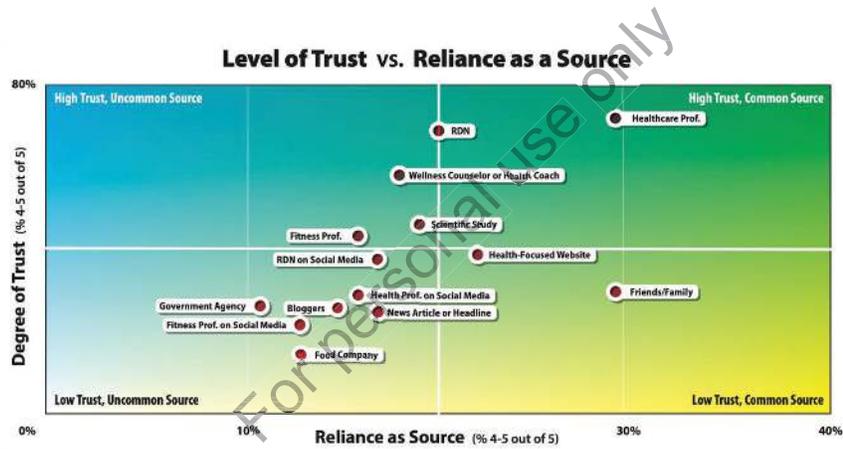
New documents show that the Academy of Nutrition and Dietetics invested in food stocks and accepted donations from junk food, sugar and soda makers, even as it trained the dietitians who teach us how to eat.

By Anahad O'Connor
October 24, 2022 at 7:33 p.m. EDT

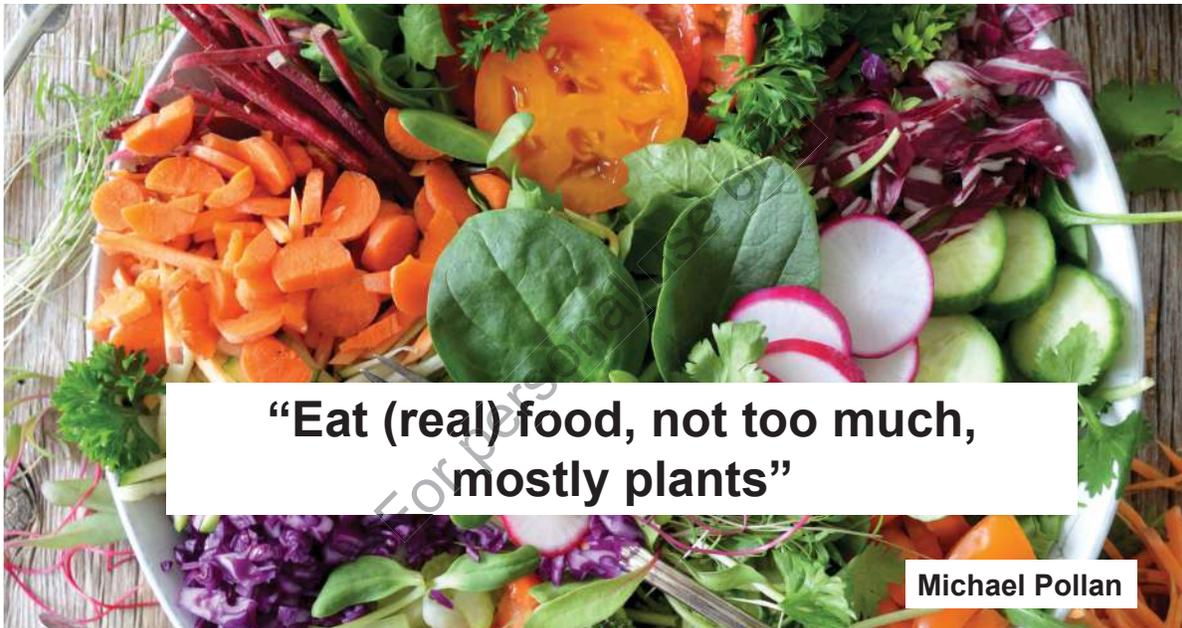


"We have found some internal organisational issues that may compromise the Academy's mission to improve health....This research illustrates the extent to which corporate funding enables corporate influence ... also suggests this has been normalized...it continues to advance corporate interests in several ways and serves as voice for its corporate sponsors"

Relationship Between Trust and Reliance



International Food Information Council. Retrieved from <https://foodinsight.org/wp-content/uploads/2017/05/2017-ExSum-FoodConfusion.pdf>



Six Powerful Interventions

- Whole Food, Plant-forward diet
- Physical Activity**
- Restorative Sleep
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Physical Inactivity Facts



www.lifespanfitness.com
www.ncpad.org
www.suite101.com
www.naturalnews.com
www.hopkinsmedicine.org

- One of the leading risk factors for death worldwide
- Key risk factor for noncommunicable diseases (NCDs) such as cardiovascular diseases, cancer and diabetes
- Globally, 1 in 4 adults is not active enough
- More than 80% of the world's adolescents are not physically active enough

<https://www.who.int/en/news-room/fact-sheets/detail/physical-activity>



LMEd (2021). Used with Permission



Home / News / Nearly 1.8 billion adults at risk of disease from not doing enough physical activity

Nearly 1.8 billion adults at risk of disease from not doing enough physical activity

"New data show that nearly one third (31%) of adults worldwide, approximately 1.8 billion people, did not meet the recommended levels of physical activity in 2022. The findings point to a worrying trend of physical inactivity among adults, which has increased by about 5 percentage points between 2010 and 2022."

breast and colon.

<https://www.who.int/news/item/26-06-2024-nearly-1.8-billion-adults-at-risk-of-disease-from-not-doing-enough-physical-activity>

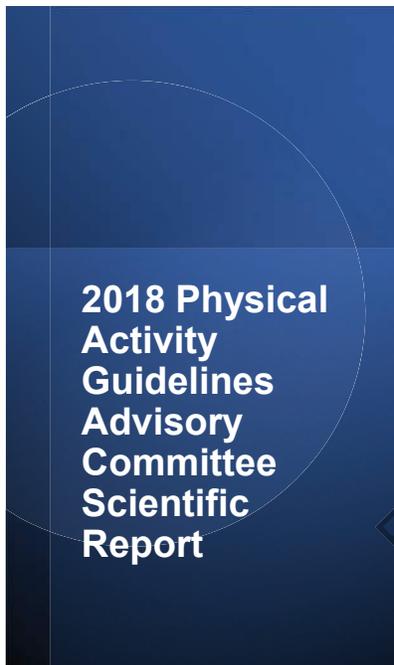
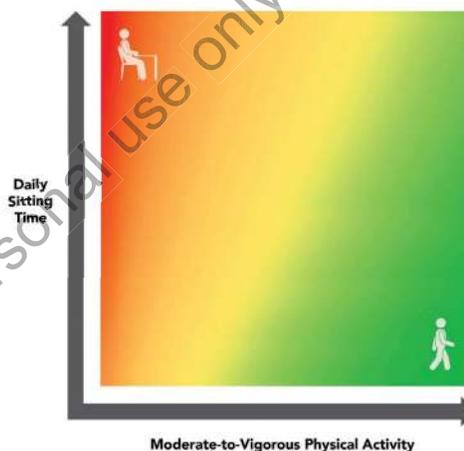
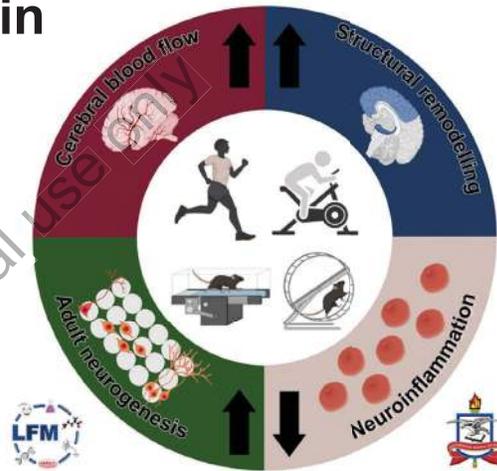


Figure D-2. Relationship Among Moderate-to-Vigorous Physical Activity, Sitting Time, and Risk of All-Cause Mortality



Exercise and the Brain

- Increased heart rate, blood flow and oxygenation to brain →
- Inducing hormonal, growth factors →
- Triggers release of inflammatory mediators →
- Reducing inflammation →
- Structural remodeling →
- Improving neuroplasticity →
- Improving cognition



Oliveira, et al. (2023). *Exercise Reshapes the Brain: Molecular, Cellular, and Structural Changes Associated with Cognitive Improvements*

Exercise Prescription: How Long is Enough?

- **Any amount of exercise is better than none!**
- There is no threshold level that must be achieved before benefits can be seen
- Most benefits are achieved at 150 minutes/week (moderate intensity)
- OR
- 75 minutes of vigorous intensity



American College of Lifestyle Medicine (2023)



Photo by JakubDziubak on Unsplash

Six Powerful Interventions

- Whole Food, Plant-forward diet
- Physical Activity
- **Restorative Sleep**
- Stress Management/Mitigation
- Positive Social Connections
- Avoidance of Risky Substances



Photo by Lux Graves on Unsplash

Restorative Sleep

“You will spend more time sleeping than doing any other single activity in your life.”

Think of it this way: sleep is so important, that it is designed to consume 1/3 of your existence. There is no other substitute.”

–Thomas Guillems, PhD

Author, *The Original Prescription*

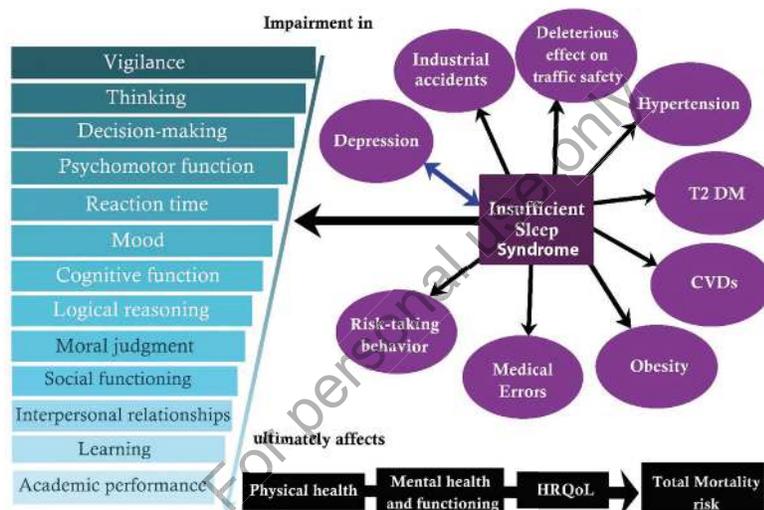
Sleep: Key Starting Points

- The **average US adult sleeps 6 hours, 57 minutes** each night
- 20% of Americans sleep <6 hours per night
- 37% of young adults sleep < 7 hours per night (doubled from 1960-2002)
- 60 million adults have frequent difficulty sleeping, only 10% seek medical attention
- Indirect costs from insomnia: **\$60 billion annually**
 - “Presenteeism”(people at work, but not productive)
 - Increased risk of long-term disability
 - Mistakes, errors and accidents

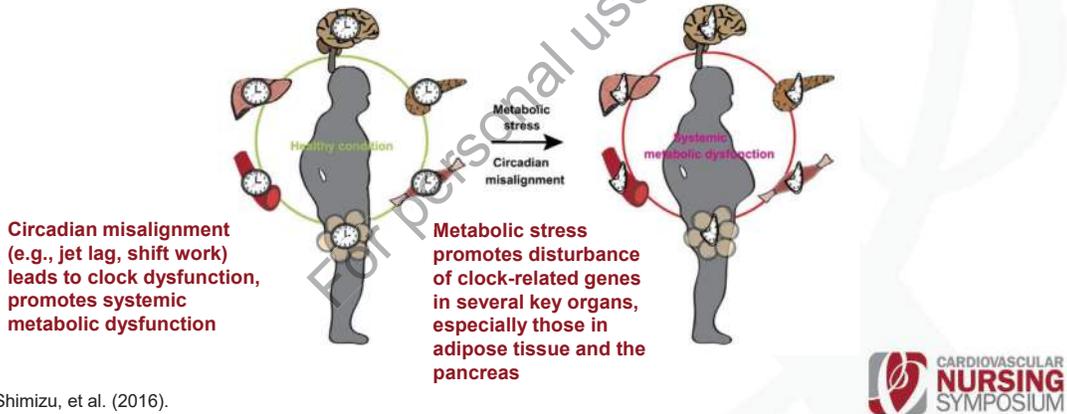
Short sleep duration associated with multiple chronic conditions, including an **increased risk of metabolic syndrome, obesity, T2DM, CVD, dementia and mortality.**



Kelly, J. and Clayton, J.S. (2021); Sidossis & Kales (2022)



Sleep Disorders, Circadian Rhythm and Metabolic Syndrome



Shimizu, et al. (2016).



ARTICLE

<https://doi.org/10.1038/s41467-021-22354-2>

OPEN

Check for updates

Association of sleep duration in middle and old age with incidence of dementia

Séverine Sabia^{1,2}, Aurore Fayosse¹, Julien Dumurgier^{1,3}, Vincent T. van Hees⁴, Claire Paquet³, Andrew Sommerlad^{5,6}, Mika Kivimäki^{2,7}, Alina Dugravot¹ & Archana Singh-Manoux^{1,2}

“Here we report higher dementia risk associated with a sleep duration of six hours or less at age 50 and 60, compared with a normal (7 h) sleep duration.... Persistent short sleep duration at age 50, 60, and 70 compared to persistent normal sleep duration was also associated with a 30% increased dementia risk independently of sociodemographic, behavioural, cardiometabolic, and mental health factors...these findings suggest that short sleep duration in midlife is associated with an increased risk of late-onset dementia.”

Sabia, et al. (2021)



Photo by Deniz Altindas on Unsplash

Six Powerful Interventions

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Eustress? Distress?



*"If you are that zebra running for your life, or that lion sprinting for your meal, your body's physiologic response mechanisms are superbly adapted for dealing with such short-term physical emergencies. **For the vast majority of beasts on this planet, stress is about a short-term crisis, after which, it's over or you're over with.***

*...Sometime we humans can be stressed by things that make no sense to zebras or lions...**we so often activate a physiological system that has evolved for responding to acute physical emergencies, but we turn it on for months on end, worrying about mortgages, relationships and promotions.**"*

Robert M. Sapolsky, author, "Why Zebras Don't Get Ulcers"

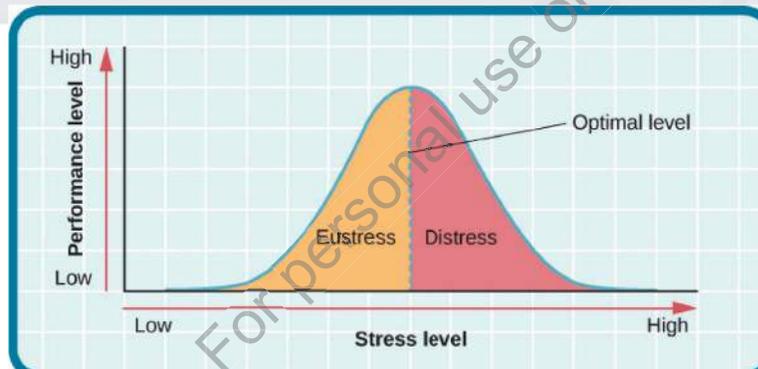
ROBERT M. SAPOLSKY
Author of *A Primate's Memoir*
WHY ZEBRAS DON'T GET ULCERS

The Acclaimed Guide to Stress, Stress-Related Diseases, and Coping—Now Revised and Updated

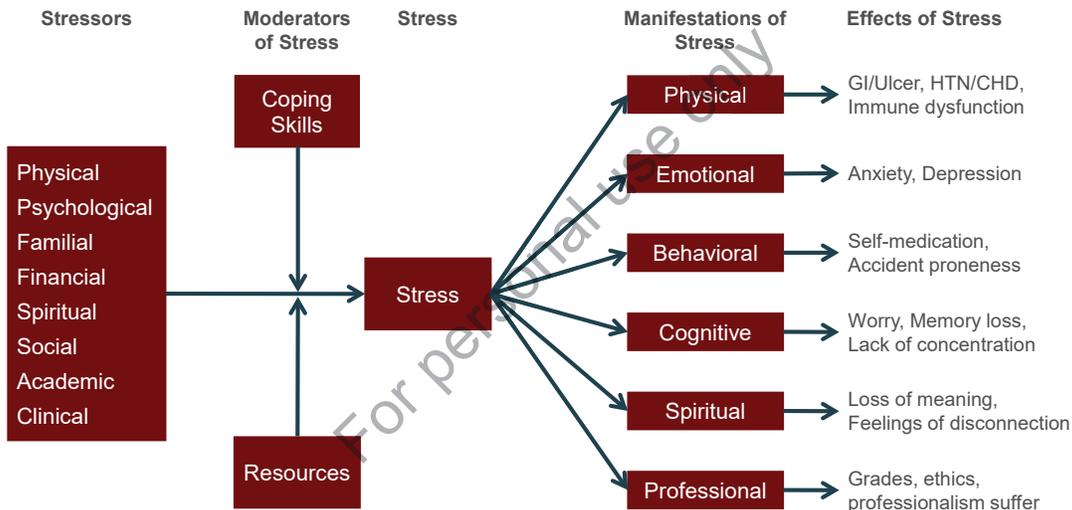
"One of the best science writers of our time."
—Oliver Sacks



Eustress vs. Distress



The Impact of Stress on Body Function



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How Do We Mitigate Stress?

Neuronal pathways connecting prefrontal cortex and limbic structures predispose the emotional state: we are influenced by what we give our attention and focus

Preoccupation with negative thoughts promotes anxiety and depression.

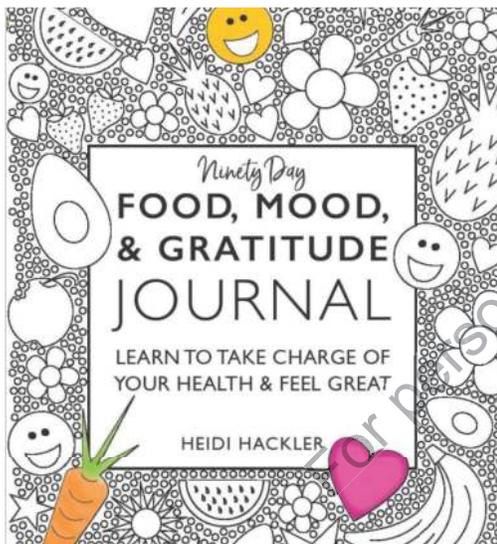
Activating positive thought processes about the past, present, and/or future can improve mental health and happiness.

Approximately a third of the thought flow during waking hours is undirected; hence the importance of intentionally activating positive thought processes

“Our life is shaped by our mind; we become what we think.”

—Buddha

Morton, D. (2018)



Liana S. Lianov, MD, MPH, Barbara L. Fredrickson, PhD, Carrie Barron, MD, Janani Krishnaswami, MD, MPH, and Anne Wallace, PhD

Positive Psychology in Lifestyle Medicine and Health Care: Strategies for Implementation

Abstract: Prevention and treatment of lifestyle-related diseases are realized through leading a healthy lifestyle. Activities supporting positive psychology can facilitate healthy behaviors and enhance physiological health. Addressing such activities in clinical care transcends

discussions to address the gap between positive psychology theory and practical implementation in health care. We briefly summarize the positive psychology–health outcomes relationship and present key strategies needed to bridge this gap.

significant risk factors in LRDs.¹⁴ The latter risk factors are not well emphasized in clinical practice, despite significant data showing their influence on LRD severity and prognosis.¹⁵ The complex interrelated factors in health and well-being may also exist in many

“Positive psychology practices such as sustained gratitude and mindfulness practices and ongoing activities that promote life purpose have been associated with a wide range of health-related behavioral and physiological effects, including fewer strokes and myocardial infarctions; lower body mass index, lipids, hemoglobin A1C, and insulin resistance; better heart rate variability among other risk factors; declining health care use; increased use of preventive services; engagement in healthy eating and physical activity; and longevity.”

FITT Prescriptions for Stress Resiliency

| Find a Purpose | Express Gratitude | Find Beauty |
|---|---|---|
| F – One evening per week | F – Five nights in the week | F – Once per week |
| I – Spend focused quality time alone for contemplation... | I – Focus on the things for which you feel gratitude... | I – Focus on the flowers, birds, trees... |
| T – Spend one hour | T – Spend 5-10 minutes | T – Spend 10-20 minutes |
| T – Strengths, gifts, talents, personal mission... | T – Write 2-3 things in your gratitude journal (e.g., “Three Good Things”...) | T – Make mindful observations using all of your senses... |

F.I.T.T. (Frequency, Intensity, Time, and Type)



Photo by Ball Park Brand on Unsplash

Six Powerful Interventions

- 🌿 Whole Food, Plant-forward Diet
- 🏃 Physical Activity
- 🛌 Restorative Sleep
- 🧠 Stress Management/Mitigation
- 👥 **Positive Social Connections**
- 🚫 Avoidance of Risky Substances

Positive Social Connection: A Key Pillar of Lifestyle Medicine

“Connection is the energy that exists between people when they feel seen, heard, and valued; when they can give and receive without judgement, and when they derive sustenance and strength from the relationship.”

*Dr. Brene Brown
Researcher and Author*



Photo by Joel Muniz on Unsplash

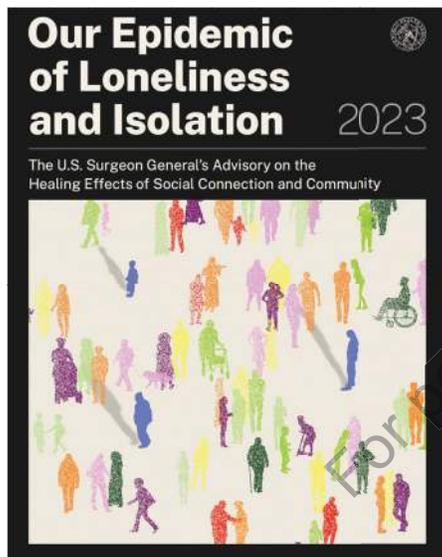
Cultivating Positive Social Connections



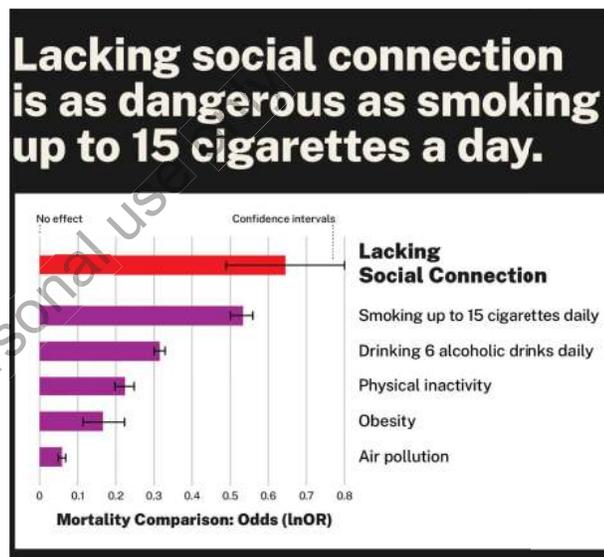
Photo by [Sasha Freerind](#) on [Unsplash](#)

“Alone, we can do so little; together, we can do so much.”

...Helen Keller

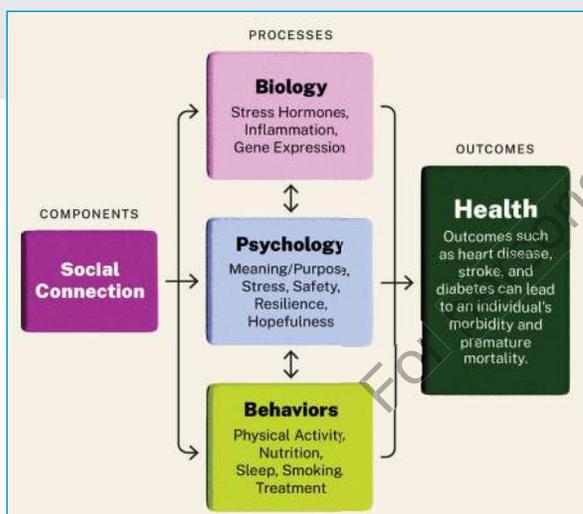


The U.S. Surgeon General's Advisory on the Healing Effects of Social Connection and Community



<https://www.hhs.gov/sites/default/files/surgeon-general-social-connection-advisory.pdf>

How Does Social Connection Influence Health?



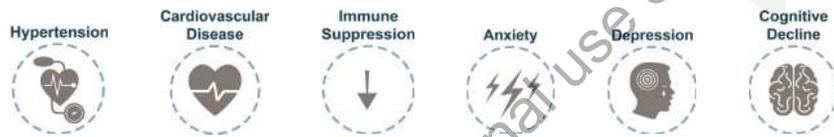
Data across 148 studies, with an average of 7.5 years of follow-up, suggest that positive social connections increase the odds of survival by 50%.



Combatting Social Isolation

What are ways in which we can combat social isolation?

Social Isolation is associated with increased risk of:



General Advice to Combat Social Isolation:

1. Engage in an activity that you enjoy such as a hobby.
2. Engage in physical activity.
3. Engage in community groups or faith-based groups to enhance feelings of belonging.
4. Look to local programs in your community or medical school.



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Photo by Saif71.com on Unsplash

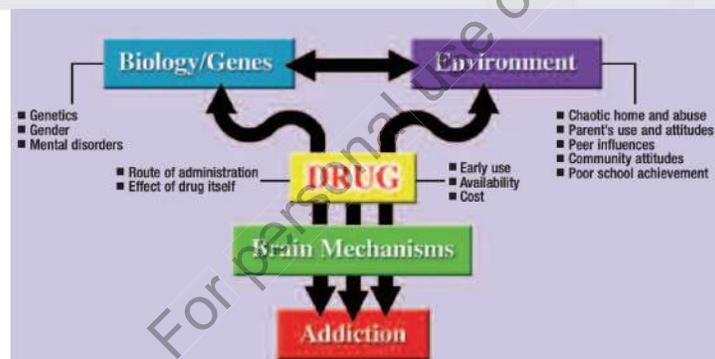
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Risk Factors for Addiction

Genetic Influences:
40% - 60% of a person's vulnerability to addiction

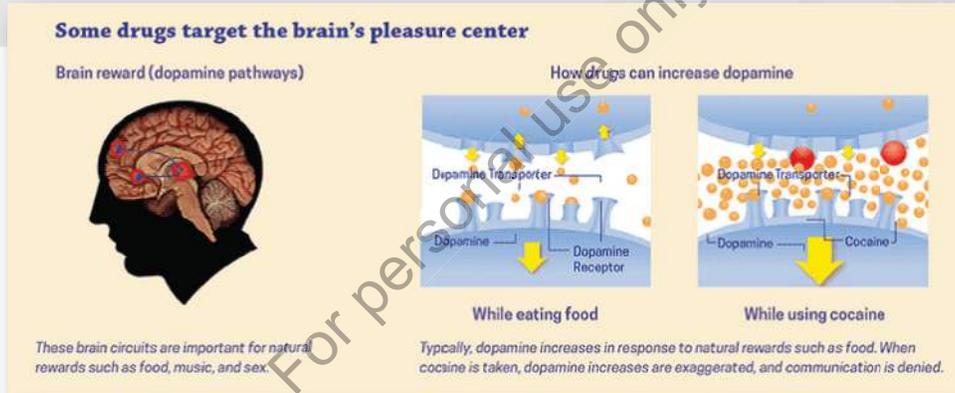
Environmental Influences:
Home,
Community,
School



Common Substances of Abuse:

- Nicotine
- Alcohol
- Marijuana
- Prescription Medications
- Social Media

Dopamine & The Pleasure Center



NIDA. Drugs and the Brain. National Institute on Drug Abuse website. <https://www.drugabuse.gov/publications/drugs-brains-behavior-science/addiction/drugs-brain>. July 10, 2020 Accessed July 14, 2020.



Non-Substance (Behavioral) Addictions

- Gambling Disorder
 - Internet Gaming Disorder
 - Internet Addiction
 - Food Addiction
 - Hypersexuality Disorder
 - Shopping Addiction
 - Exercise Addiction
 - Tanning Addiction
- Other:**
- Work Addiction
 - Any others?

Petry (2015) Behavioral Addictions: DSM-5® and Beyond. Retrieved from <https://academic.oup.com/book/24458>



“The smartphone is the modern-day hypodermic needle, delivering digital dopamine 24/7 for a wired generation, If you haven’t met your drug of choice yet, it’s coming soon to a website near you.”

Anna Lembke, MD, Author, Dopamine Nation: Finding Balance in the Age of Indulgence



Empowering Behavioral Change

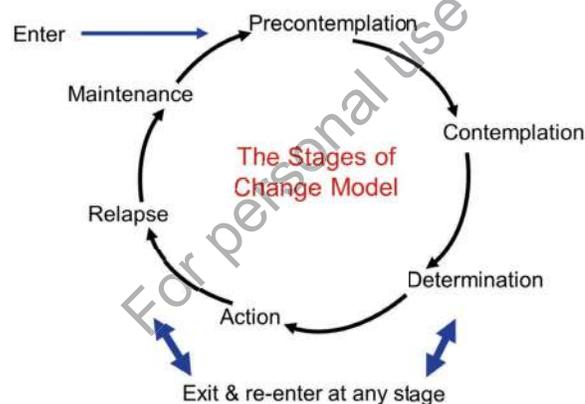


Empowering Behavioral Change: Coach vs. Expert

- ***Behavior change is the foundational principle of Lifestyle Medicine prescriptions.***
- The LM Provider uses collaborative style that builds rapport, trust, and respect and to support the patient/client throughout the change process.
- This approach empowers the patient to recognize their own capacity for change, use their own insight, and expertise, to enact and sustain behavior change.
- Co-creating SMART goals that are specific, measurable, action-oriented, realistic, and timebound enables individuals to experience and celebrate small successes and provides constant motivation to continue their lifestyle changes.



Empowering Behavioral Change



| Stages of Change | |
|---|---|
| Precontemplation: "I don't need to change." | The patient is not ready for change and does not intend to take action in the foreseeable future (within the next six months); lack of awareness of the need to change ; not planning or making a change in the foreseeable future (usually defined as the next 6 months) |
| Contemplation "I may change." | The patient is considering making a change in their behavior within the next six months (but sometimes can be at this stage for years) |
| Preparation "I will change." | The patient has determined that behavior change is beneficial, and they intend to take action within the next month |
| Action "I am changing." | The patient has enacted a specific health behavior change, but has been doing so for less than six months |
| Maintenance "I have been making a change for more than 6 months." | The patient has sustained the health behavior change for at least six months |
| Termination "I won't return to my old habit." | The patient is no longer tempted to return to their old unhealthy behavior |

American College of Lifestyle Medicine (2021). Used with Permission

| Transtheoretical Model and Staged-Matched Responses | |
|--|---|
| Precontemplation: "I don't need to change," or "I can't change." | Consciousness-raising to increase perceived gains for changing; Discuss health risks associated with specific behaviors (e.g., smoking and lung cancer) and highlight benefits associated with behavior change. |
| Contemplation: "I may change." | Personalize health risks , weigh risks and benefits, and highlight the impact of on personal goals (e.g., highlight risk of smoking and heart attack if positive family history of heart attack) |
| Preparation: "I will change." | Assist with commitment , plan specific change(s), and discuss ways to modify their environment. |
| Action: "I am changing." | Structure the plan. Identify sources of frequent barriers to behavior change, identify social support , problem-solving obstacles, CBT, and reframe unhealthy thought patterns (e.g., "I can't walk in the cold weather" → "I can dress for the weather.") |
| Maintenance: "I have been making a change for more than 6 months." | Discuss coping strategies to mitigate stress, and continue reinforcement as well as Cognitive Behavioral Therapy |
| Termination: "I won't return to my old habit." | 100% self efficacy |

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Demonstrate a personal commitment to healthy lifestyle choices

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graph TD
    A[Evaluate your current lifestyle habits (e.g. eating too much sugary foods, not getting enough sleep or exercise)] --> B[Write 1-2 sentences to summarize your current habits]
    C[Choose ONE lifestyle behavior you want to change or maintain this year] --> D[Exercise/PA, nutrition, sleep, emotional wellness, stress resiliency, smoking cessation, avoiding risky substance use, emphasis on behavior]
    E[Set your Goal with measurable outcomes] --> F[What is a "Goal?"]
    F --> G[Include directions, similar to those you might give a patient, for achieving the goals. Describe the method you will use to measure your outcomes.]
  
```

| | |
|----------|---|
| S | Specific Clearly state your Goal |
| M | Measurable Ensure you can Measure Success |
| A | Attainable Set Goals you know you can Achieve |
| R | Relevant Set Goals Relevant to your Career or Education |
| T | Time-Based Set a Deadline for Completion |

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Questions?

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